Claims

1. Method for determining the minimal cost path between two points (A,B), via a transport network comprising a plurality of nodes (P_n) which are connected in pairs by segments, wherein:

- a cost is attributed to each segment of the network;
- a path graph is developed, substantially starting from at least one of the two points (A,B); and
- the minimal cost path which connects the two points (A,B) is determined,

the method being characterised in that

- two path graphs are developed, substantially starting from two points (A,B) respectively;
- the development of the two graphs is interrupted when they comprise at least one first common interference node (P_i);
- the two minimal cost paths belonging respectively to the two graphs are determined; and
- the two minimal cost paths are connected in order to obtain the minimal cost path between the two points (A,B).

2. Method according to claim 1, wherein, in the case when at least one of the points (A,B) is situated substantially at the location of a node, the corresponding graph is developed starting from the said node.

3. Method according to claim 1 or claim 2, wherein, for at least one of the two points (A,B), at least two adjacent nodes ($P_{A,n}$, $P_{A,n+1}$) of the said point (A) are sought, a non-zero basic cost is attributed to each of these two nodes ($P_{A,n}$, $P_{A,n+1}$), and a single graph is developed starting from these two nodes ($P_{A,n}$, $P_{A,n+1}$).

4. Method according to claim 3, wherein since the two nodes ($P_{A,n}$, $P_{A,n+1}$) form a segment on which the point (A) is substantially situated the basic cost of each node ($P_{A,n}$, $P_{A,n+1}$) is determined by proportionality starting from the cost of the segment between these two nodes ($P_{A,n}$, $P_{A,n+1}$).

5. Method according to any one of claims 1 to 4, wherein:

- the segments are classified according to a plurality of network levels;

- during the development of at least one of the two graphs, the number of segments of the graph which belong to the lowest level m_{inf} is calculated; and
- starting from a predefined threshold of number of segments of level m_{inf}, the graph is developed taking into account only the segments which belong to the levels which are strictly higher than the level m_{inf}.

6. Method according to claim 5, wherein:
- during the development of the two graphs, the number of segments of each graph which belong to the lowest level m_{inf} is calculated; and
- when the number of segments of level m_{inf} has reached the said threshold for the two graphs, the development of the two graphs is continued, taking into account only the segments which belong to the levels which are strictly higher than the level m_{inf}.

7. Method according to claim 5 or claim 6, wherein the development of the said graph is started by taking into account all the segments which belong to all the levels of the network.

8. Method according to any one of claims 1 to 7, wherein:
- a group of successive segments with a given level m is sought, comprising exclusively intermediate nodes which do not belong to any segment with a level which is at least equal to m, other than those of the group of successive segments with the level m concerned; and
- the group of successive segments is substituted by a single segment with a level m.

9. Method according to any one of claims 1 to 8, wherein each graph is developed in a globally concentric manner.

10. Method according to claim 9, wherein the two graphs are developed by using a bucket algorithm.

11. Method according to any one of claims 1 to 10, wherein the two graphs are developed simultaneously.

12. Method according to any one of claims 1 to 11, wherein, having found the said first common interference node (P_i), the optimal interference node (P_{io}) is sought from amongst the nodes already analysed, in order to determine the two minimal cost paths which contain the optimal interference node (P_{io}).

13. Road navigation aid server for implementation of the method according to any one of claims 1 to 12, comprising an interface (10) for connection to a communication network (3), a block (11) for receipt of requests from client terminals, a block (12) for receipt of road network data, a block (13) for classification of road segments, a block (14) for creation of a virtual road network, a block (15) for labelling of road segments, a calculation module (16) and a transmission block (17).

14. Server according to claim 13, wherein the calculation module (16) comprises a graph development block (160), a block (161) for detection of a change of level of segments, and a block (162) for determination of the minimal cost path.